



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,310	04/17/2007	Cedrick Stanislas Collomb	SCDY 22.572 (100809-00332)	3190
26304 7590 12/23/2008 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER MCDOWELL, JR, MAURICE L	
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 12/23/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,310	<b>Applicant(s)</b> COLLOMB, CEDRICK STANISLAS	
	<b>Examiner</b> MAURICE MCDOWELL, JR	<b>Art Unit</b> 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/2007; 5/24/2006</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-8 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled “Clarification of ‘Processes’ under 35 U.S.C. 101”). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

3. Claims 9-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 9-11 fail to fall within a statutory category of invention. Claims 9 and 10 are directed to the program itself, and claim 11 is directed to transmission which could be wireless or signal. Program itself and signal are not a process occurring as a result of executing the program, a machine programmed to operate in accordance with the program nor a manufacture structurally and functionally interconnected with the program in a manner which enables the program to act as a computer component and realize its functionality. They are also

Art Unit: 2628

clearly not directed to a composition of matter. Therefore, they are non-statutory under 35 USC 101.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voorhies et al. Patent No.: 5,704,024 in view of Cerny et al. Pub. No.: US 2003/0112238 A1.

6. Regarding claim 1, Voorhies teaches: A method of forming a two dimensional map of a three dimensional environment, there being a map origin located in the three dimensional environment, a viewing direction vector defined passing through the map origin, and a one-to-one correspondence between map positions in the map and the directions of vectors passing through the map origin; the method comprising the steps of: associating an environment position in the three dimensional environment with a folded vector that passes through the map origin, the folded vector lying in a plane containing both the viewing direction vector and the environment position and forming an angle with the viewing direction vector that is a predetermined function of the angle between the viewing direction vector and a vector between the map origin and the environment position (fig. 9) (R is the folded vector because  $R_x$  and  $R_y$  components are divided by the magnitude of the sum of the reflection vector components (i.e., divided by 5.5) to

Art Unit: 2628

determine the indexed location on face four of the environment map, also R passes through the origin and forms an angle with the viewing direction vector E); and deriving properties for a map position from the properties of the corresponding environment position (fig. 6).

7. Voorhies doesn't teach: associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position.

8. The analogous prior art Cerny teaches: associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position (fig. 3) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

10. Regarding claim 2, Voorhies teaches: A method, in which the predetermined function is a multiplication by a predetermined quantity (fig. 11, 1325).

11. Regarding claim 3, Voorhies teaches: A method, in which the predetermined function is a multiplication by 0.5 (fig. 11, 1320).

Art Unit: 2628

12. Regarding claim 4, Voorhies teaches: A method, in which the one-to-one correspondence of a map point with the direction of a vector through the map origin represents a projection onto a predetermined plane of a point on the vector which is a predetermined distance from the map origin (fig. 6).

13. Regarding claim 5, Voorhies teaches: A method, in which the predetermined plane is a plane orthogonal to the viewing direction vector (fig. 6).

14. Regarding claim 6, Voorhies teaches: An image rendering method comprising the steps of: generating a two dimensional map of a three dimensional environment (fig. 4, 512); for a point of interest on an object to be displayed, deriving a reflection vector in dependence on a normal vector at the point of interest and a direction of view (fig. 4, 510); referencing a position in the two dimensional map using the reflection vector, to detect environmental properties at that map position (fig. 6).

15. Voorhies doesn't teach: varying the appearance of the object at the point of interest in dependence on the detected environmental properties.

16. The analogous prior art Cerny teaches: varying the appearance of the object at the point of interest in dependence on the detected environmental properties (fig. 4, 430) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

17. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine varying the appearance of the object at the point of interest in dependence

Art Unit: 2628

on the detected environmental properties as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

18. Regarding claim 7, Voorhies doesn't teach: A method, in which the varying step is performed in dependence on a reflectivity of the object at the point of interest.

19. The analogous prior art Cerny teaches: A method, in which the varying step is performed in dependence on a reflectivity of the object at the point of interest (fig. 4, 430) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the varying step is performed in dependence on a reflectivity of the object at the point of interest as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

21. Regarding claim 8, Voorhies doesn't teach: A method in which the environmental properties represent lighting properties.

Art Unit: 2628

22. The analogous prior art Cerny teaches: A method in which the environmental properties represent lighting properties (fig. 4, 415) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the environmental properties represent lighting properties as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

24. Regarding claim 9, Voorhies doesn't teach: Computer software having program code for carrying out a method.

25. The analogous prior art Cerny teaches: Computer software having program code for carrying out a method (fig. 2, 210) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Computer software having program code for carrying out a method as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's



Art Unit: 2628

location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

27. Regarding claim 10, Voorhies doesn't teach: A providing medium by which software is provided.

28. The analogous prior art Cerny teaches: A providing medium by which software is provided (fig. 2, 210) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine providing medium by which software is provided as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

30. Regarding claim 11, Voorhies doesn't teach: A medium, the medium being a transmission medium.

31. The analogous prior art Cerny teaches: A medium, the medium being a transmission medium (fig. 2, 226) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

Art Unit: 2628

32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the medium being a transmission medium as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

33. Regarding claim 12, Voorhies doesn't teach: A medium, the medium being a storage medium.

34. The analogous prior art Cerny teaches: A medium, the medium being a storage medium (fig. 2, 210) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the medium being a storage medium as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

36. Regarding claim 13, Voorhies teaches: Apparatus for forming a two dimensional map of a three dimensional environment, there being a map origin located in the three dimensional environment, a viewing direction vector defined passing through the map origin, and a one-to-

Art Unit: 2628

one correspondence between map positions in the map and the directions of vectors passing through the map origin; the apparatus comprising: means for associating an environment position in the three dimensional environment with a folded vector that passes through the map origin, the folded vector lying in a plane containing both the viewing direction vector and the environment position and forming an angle with the viewing direction vector that is a predetermined function of the angle between the viewing direction vector and a vector between the map origin and the environment position (fig. 9); and means for deriving properties for a map position from the properties of the corresponding environment position (fig. 6).

37. Voorhies doesn't teach: means for associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position.

38. The analogous prior art Cerny teaches: means for associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position (fig. 3) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

39. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine means for associating an environment position with the map position corresponding to the direction of the folded vector associated with that environment position as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's

Art Unit: 2628

location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

40. Regarding claim 14, Voorhies teaches: An image rendering apparatus comprising: map generating apparatus (fig. 3, 410); means for deriving a reflection vector, in respect of a point of interest on an object to be displayed, in dependence on a normal vector at the point of interest and a direction of view (fig. 4, 510); means for referencing a position in the two dimensional map using the reflection vector, to detect environmental properties at that map position (fig. 6).

41. Voorhies doesn't teach: means for varying the appearance of the object at the point of interest in dependence on the detected environmental properties.

42. The analogous prior art Cerny teaches: means for varying the appearance of the object at the point of interest in dependence on the detected environmental properties (fig. 4, 430) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

43. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine means for varying the appearance of the object at the point of interest in dependence on the detected environmental properties as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

Art Unit: 2628

44. Regarding claim 15, Voorhies doesn't teach: A video game machine comprising apparatus.

45. The analogous prior art Cerny teaches: A video game machine comprising apparatus (fig. 2, 200) for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

46. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine video game machine comprising apparatus as shown in Cerny with Voorhies for the benefit of to implement a system and method of environment mapping that depends upon an observer's location with respect to an object's location and orientation to generate a more realistic reflection pattern, and that is consistent with results of the direct normal projection method for particular object-observer geometries.

### ***Conclusion***

47. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent Nos.: 6,118,474; US 6,697,062 B1; 5,864,639; US 7,091,973 B1; Pub. No.: US 2003/0171840 A1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAURICE MCDOWELL, JR whose telephone number is (571)270-3707. The examiner can normally be reached on Mon-Friday 7:30am - 5:00pm Eastern Time.

Art Unit: 2628

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on 571--272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MM

/XIAO M. WU/  
Supervisory Patent Examiner, Art Unit 2628